

**REMARKS/ARGUMENTS****Specification**

In the current Office Action, in paragraph 2 at the bottom of page 2, the Examiner said that objection to the specification under 37 CFR 1.75(d)(1) is withdrawn. However, the Examiner further stated in paragraph 2 at the bottom of page 2 that the "examiner fails to find any support of the drawings corresponding to the amended specification..." This remark by the Examiner is respectfully traversed herewith, at least because there is no citation in paragraph 2 at the bottom of page 2 to any rule or law which requires "support of the drawings corresponding to the amended specification."

Additionally, in the current Office Action, in paragraph 3 on page 3, the Examiner objected to the specification. The Examiner stated as follows:

3. The amended specification filed on 11/23/2007 is objected to under 35 U.S.C. 132(a) because: the limitation "writing a plurality of logs, at least one log for each row identified in the group of row-identifier and value pairs" claim 9 is not provided in the original specification mailed on 05/18/2004;

The above-quoted remarks are respectfully traversed. The application filed on 05/18/2004 included "Specification [Total Pages **24**]" as item 3 shown below:

<b>UTILITY PATENT APPLICATION TRANSMITTAL</b>  <small>(Only for new nonprovisional applications under 37 CFR 1.53(b))</small>		Attorney Docket No.	ORA018 US
		First Inventor	Richard Yu Gu
		Title	VECTOR READS FOR ARRAY UPDATES
		Express Mail Label No.	EV 448 867 113 US

APPLICATION ELEMENTS <small>See MPEP chapter 600 concerning utility patent application contents.</small>		ADDRESS TO: <small>Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450</small>	
1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g. PTO/SB/17) (in duplicate) <small>(Submit an original, and a duplicate for fee processing)</small>	7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program <i>(Appendix)</i>		
2. <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.	8. Nucleotide and/or Amino Acid Sequence Submission		
3. <input checked="" type="checkbox"/> Specification <span style="float: right;">[Total Pages <b>24</b>]</span> <small>(preferred arrangement set forth below)</small>	a. <input type="checkbox"/> Computer Readable Form (CRF)		
- Descriptive title of the invention	b. Specification Sequence Listing on:		
- Cross Reference to Related Applications	i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or		
- Statement Regarding Fed sponsored R & D	ii. <input type="checkbox"/> paper		
- Reference to sequence listing, a table, or a computer program listing appendix	c. <input type="checkbox"/> Statements verifying identity of above copies		
- Background of the invention			
- Brief Summary of the invention			
- Brief Description of the Drawings <i>(if filed)</i>			
- Detailed Description			
- Claim(s)			
- Abstract of the Disclosure			
		<b>ACCOMPANYING APPLICATION PARTS</b>	
		9. <input type="checkbox"/> Assignment Papers (cover sheet & assignment (5 pages)).	
		10. <input type="checkbox"/> 37 CFR 3.73(b) Statement <input type="checkbox"/> Power of Attorney	

Among the 24 pages of specification filed on 05/18/2004 is page 20, shown below:

repeating said finding of block-identifiers for all row-identifiers in the group of (row-identifier, value) pairs.

6. The method of Claim 1 wherein:  
the database index is a hash index and the table is organized in a hash cluster; and  
during said finding, a single directory is used to obtain the block identifier.

7. The method of Claim 1 wherein:  
the database index is a B-tree index.

8. The method of Claim 1 wherein:  
said structure comprises an array; and  
the array has a number of entries identical to the number of blocks that can be held in the buffer cache.

9. The method of Claim 1 further comprising:  
writing a plurality of logs, at least one log for each row identified in the group of (identifier, value) pairs.

10. The method of Claim 9 further comprising:  
unpinning each block after updating all rows in said each block; and  
flushing an unpinned block to disk only when another block needs space in the buffer cache occupied by the unpinned block.

11. The method of Claim 1 wherein:  
a plurality of file offsets are provided to the vector read operation, one offset for each block in the group.

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In the above-shown page 20, lines 13-15 contain Claim 9. Hence, the limitation "writing a plurality of logs, at least one log for each row identified ..." in claim 9 is not new matter, because it was already present in page 20 as filed on 05/18/2004.

Hence, Applicants believe that there is no basis for the Examiner's remark , in paragraph 3 on page 3 of the Office Action, that the limitation "writing a plurality of logs, at least one log for each row identified ..." claim 9 is not provided in the original specification mailed on 05/18/2004.

Accordingly, Applicants respectfully request the Examiner to withdraw the specification objection, because text added to paragraph [0038] on page 13 of the specification on 11/23/2007 is supported by text originally submitted in page 20, lines 13-15 of the 05/18/2004 filing.

Rejection of Claim 9 under 35 USC §112

As discussed above, the 11/23/2007 amended specification at paragraph [0038] on page 13 now includes text "writing a plurality of logs, at least one log for each row identified ..." Hence, the specification as amended on 11/23/2007 now provides a written description for the "writing" limitation in Claim 9, under 35 USC §112 first paragraph.

No further explanation in the specification is needed for the "logs" of Claim 9, because a skilled artisan at the time of the invention knows about logs. For example the words "log", "logs" or "log file" are used in the following prior art citations made by the Examiner in the current application's file history: US Patent 5,918,225, US Patent 6,321,234, US Patent 6,385,626.

Note that Claim 9 is amended to remove the limitation "performing a write operation from said cache to said storage device when space is needed in said cache." So, Claim 9 now corresponds to Claim 9 as originally filed.

Accordingly, Applicants respectfully request the Examiner to withdraw the §112 first paragraph rejection of Claim 9, based on paragraph [0038] of the specification as amended.

Obviousness rejection of Claim 1

Claim 1 stands rejected under 35 U.S.C. §103 as being obvious over the teachings of US Patent 7,080,081 hereinafter Agarwal, in view of US Patent 5,517,631 hereinafter Machado. This rejection is respectfully requested to be withdrawn for several reasons as follows.

Firstly, in modifying the teachings of Agarwal with Machado, at most a skilled person may use Machado's "single sequence" to retrieve information from a contiguous storage space of Agarwal. Specifically, there appears to be no disclosure in the combined teachings of Agarwal and Machado to use a single access operation to retrieve several blocks that are non-contiguous. See Claim 1 at line 17 which states "wherein several of said blocks are non-contiguous in said storage device".

In the current Office Action, the Examiner did not cite, by column number and line number, any text in either of the two cited references by Agarwal and Machado against this limitation in Claim 1. See line 3 at the top of page 7 of the current Office Action. The Examiner's failure to cite any prior art against this limitation in Claim 1, appears to be an admission that this is a novel limitation which is not disclosed in the Examiner's combination of Agarwal and Machado.

Moreover, Agarwal appears to be "teaching away" from Claim 1, by stating that blocks store information in a contiguous storage space, at column 2, line 7 of Agarwal. Additionally, Agarwal processes a block at a time from a list as stated at column 8, lines 40-41. Agarwal states "This would involve just one I/O as a block is stored as an extent on disk and can be read into the bufferpool as a unit." Therefore, in applying Machado's single sequence to Agarwal, a skilled artisan would simply retrieve just one block at a time, as information within a block is in a contiguous storage space per Agarwal.

Even if Machado were used by a skilled person to retrieve multiple blocks based on Agarwal's list, only those multiple blocks in Agarwal's list would be retrieved that are contiguous. Hence, a single access operation without context switching to retrieve several blocks that are non-contiguous appears to not be disclosed in the combined teachings of Agarwal and Machado.

Secondly, in the prior amendment filed on July 14, 2008 Applicants stated as follows in the top-half of page 16:

If the Examiner continues to use Agarwal in a future Office Action, the Examiner is respectfully requested to explicitly identify what is referred to as the “structure” in Agarwal’s patent, what is referred to as the “table” in Agarwal’s patent, what is referred to as the “cache” in Agarwal’s patent, and what is referred to as an “array update operation” in Agarwal’s patent. Moreover, if the Examiner continues to use Machado or Agarwal in a future Office Action, the Examiner is respectfully requested to explicitly identify what is referred to as their lack of “context switch.”

Despite this explicit request by Applicants, the current Office Action provides no response whatsoever to Applicants’ request quoted above.

Specifically, the current Office Action repeats in italics the Examiner’s prior remarks, without any additional response as to why Applicants’ prior arguments for the patentability of Claim 1 are considered by the Examiner to be not persuasive. Please compare the italicized text in pages 5-7 of the current Office Action dated December 22, 2008 with the corresponding text in pages 3-5 the prior Office Action dated March 12, 2008. Hence, Applicants’ prior arguments, on pages 13-16 of the amendment filed on July 14, 2008, are now incorporated by reference herein. Accordingly, the Examiner is requested to respond to each argument, and accordingly the next Office Action is respectfully requested to be made non-final.

Thirdly, the Examiner did not cite, by column number and line number, any text in either of the two cited references by Agarwal and Machado as disclosing the “generating” limitation followed by the “wherein” clause in Claim 1 (see lines 3-6 of Claim 1 above). Specifically, the Examiner stated at the top of page 5 of the current Office Action as follows:

As per claim 1, Agarwal et al. discloses "a method implemented in a computer, the method comprising:"

"generating an array update operation based on a query to update a relational database; wherein said array update operation specifies a plurality of row-identifier and value pairs to update multiple rows in a table of said relational database;"

The Examiner's failure to cite any prior art in support of the above-quoted remark appears to be an admission that the first limitation of Claim 1, namely on "generating" is not disclosed in the combination of Agarwal and Machado. Hence, this is an additional reason for the patentability of Claim 1.

For the above-discussed reasons, reconsideration and withdrawal of the obviousness rejection of Claim 1 is respectfully requested.

#### Prior Art rejections of Claims 2-11 and 19

Claims 2-11, 19 and new Claim 21 depend from Claim 1 and are, therefore, likewise patentable for at least the above-discussed reasons in reference to Claim 1.

Moreover, the current Office Action simply repeats in italics the Examiner's prior remarks, without any additional response to Applicants' arguments for the patentability of Claims 2, 19, 3, 8, 10 and 11 in the amendment filed on July 14, 2008.

As one example, Applicants argued previously that "sort" as required in Claim 2 is nowhere disclosed in Examiner-cited text of Agarwal at column 5, lines 14-18 and column 6 lines 10-13. But the Examiner did not respond with an explanation as to why Agarwal discloses sorting. Instead, the Examiner simply repeated the prior remarks. Please compare lines 3-9 on page 8 of the current Office Action with lines 11-17 on page 6 of the prior Office Action dated March 12, 2008.

As additional examples, Claims 3 and 19 recite limitations related to Claim 2's sorting that provide further novelty over Agarwal, as previously argued by Applicants. In the current Office Action, the Examiner did not respond with an explanation as to why Agarwal's sorting (even assuming it is disclosed) should be performed after block-

identifiers are stored in a structure as recited in Claim 3. Also, the Examiner did not explain as to why Agarwal's sorting (assume) should be based on adjacency as specifically recited in Claim 19 (center/ periphery of a disk). Instead of providing further explanation of their position on why Applicants' arguments about Claims 3 and 19 are incorrect, the Examiner simply repeated the prior remarks.

In view of the above examples, it appears that Applicants' prior arguments, on pages 16-19 of the amendment filed on July 14, 2008 were not considered in preparation of the current Office Action. Hence, Applicants' prior arguments for the patentability of Claims 2, 19, 3, 8, 10 and 11, as fully set forth on pages 16-19 of the amendment filed on July 14, 2008 are now incorporated by reference herein. Accordingly, the Examiner is respectfully requested to respond to each argument previously made, and in doing so, make the next Office Action to be non-final.

#### Claims 13-18 and 20

Claims 13-18 and 20 recite one or more limitations that are supported by arguments for patentability that are similar to one or more of the arguments presented above in reference to Claim 1. Accordingly, these claims are also similarly patentable.

#### Claim Amendments

Note that the "performing" limitation which is removed from Claim 9 as discussed above is now presented in a newly added Claim 21. Support for Claim 21 can be found throughout the specification, including, for example, the last sentence in paragraph [0024] on page 8 as filed on 05/18/2004 which says as follows: "... block BLOCKj is flushed to disk 130 via a disk write operation 141 (FIG. 1) only when the space occupied by an unpinned block BLOCKj is needed by another block being fetched into buffer cache 140."

Claim 10 is amended to depend from Claim 1, and the "disk" is replaced with "storage device" which has antecedent basis in Claim 1.

Claims 15, 16 and 17 are amended to recite a limitation on several blocks being "non-contiguous." Support can be found throughout the original application papers filed

Amdt dated April 22, 2009

on 05/18/2004, including, for example, the "non-contiguous to-be-read blocks" in paragraph [0027] on page 9

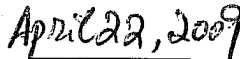
Conclusion

Hence, Applicants respectfully request allowance of all pending claims. Please call the undersigned at (408) 378-7777 ext 113 in case of questions.

**CERTIFICATE OF EFS-WEB TRANSMISSION**

I hereby certify that this correspondence is being electronically transmitted to the U.S. Patent and Trademark Office to via the USPTO Electronic Filing System on the below date.

  
Attorney for Applicant(s)

  
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Respectfully submitted,



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